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and dissertations. These two works obtained the prizes of eloquence from the French Institute last year. The first of them gives French literature its full share of credit for every improvement that took place in any part of Europe.

A vein of tin ore, in the state of crystallized oxide, has lately been discovered in France. It has been analysed by Vauquelin, who obtained from it tin of excellent quality, and it is supposed, that it will be worth working.

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## DISCOVERIES AND IMPROVEMENTS IN ARTS, MANUFACTURES, &c.

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*Specification of the patent granted to Peter Durand, of Hoxton-square, Middlesex, merchant; for a method of preserving animal-food, vegetable-food, and other perishable articles, a long time from perishing or becoming useless. Communicated to him by a person residing abroad.*

Dated August, 25th, 1810.

TO all whom these presents shall come, &c. Now know ye, that in compliance with the said proviso, I the said Peter Durand do hereby declare, that the nature of the said invention, and the manner in which the same is to be performed, are particularly described and ascertained as follow; that is to say:—First, I place and enclose the said food or articles in bottles, or other vessels of glass, pottery, tin, or other metals, or fit materials. And I do close the aperture of such containing vessels, so as completely to cut off and exclude all communication with the external air; and as to the method of closing, I do avail myself of the usual means of corking, wiring, cutting, or cementing: and in large vessels, I make use of corks, formed of pieces glued together, in such a manner as that the pores of that substance shall be in a cross direction with regard to the aperture into which such corks are to be driven. And I do also, in

such vessels as may admit of or require the same, make use of stoppers, fitted or ground with emery or screw caps, with or without a ring of leather, or other soft substance between the faces of closure, and also of cocks or cross plugs, or covers of leather, cloth, parchment, bladder, and the like.

Secondly, When the vessels have been thus charged and well closed, I do place them in a boiler, each separately surrounded with straw, or wrapped in coarse cloth, or otherwise defended from striking against each other. And I fill the said boiler, so as to cover the vessels with cold water, which I gradually heat to boiling, and continue the ebullition for a certain time, which must depend upon the nature of the substances included in the vessels, and the size of the said vessels, and other obvious circumstances, which will be easily apprehended by the operator, without farther instruction.

Vegetable substances are to be put into the vessel in the raw or crude state, and animal substances partly or half-cooked, although these may also be put in raw.

The food, or other articles thus prepared, may be kept for a very long time in a state fit for use, care being taken that the vessel shall

not be opened until their said contents shall be wanted for consumption.

And, lastly, I do declare, that although the application of the water-bath, as hereinbefore described, may be the most commodious and convenient, I do likewise avail myself of the application of heat, by placing the said vessels in an oven, or a stove, or a steam-bath, or any other fit situation for gradually and uniformly raising the temperature of the same, and suffering them to cool again.

And farther, that I do, as the choice of the consumer, or the nature of the said food or other article may render preferable, leave the aperture of the vessel, or a small portion thereof, open, until the effect of the heat shall have taken place at which period I close the same.

In witness whereof, &c.

*Observations by the Patentee.*—When I received from a friend abroad, more than a year ago, a communication of the discovery above described, I perceived that there was still a great deal to be done to render it perfect, and to produce a fit substitute on board ship for salted provisions, which are usually preserved by means of spirits and acids. In consequence, I employed myself in making experiments upon a much larger scale than had hitherto been done. I substituted tin-cases instead of glass jars or bottles, and prepared to the extent of thirty pounds of meat at once. Being convinced that the operation was as sure in large quantities as in small, I wished, before offering my services to my countrymen, to have the approbation of those who might inspire them with confidence. I therefore requested Sir Joseph Banks to do me the favour to receive some cases of meat, of different sizes, as well as of milk and soup. These several boxes he had the goodness to have opened

in his presence, and the contents were found perfectly preserved, though several months had elapsed. A number of scientific gentlemen, both of the Royal Society and of the Royal Institution, having at his request examined and analyzed the different provisions, found them perfectly preserved.

Two cases that had been preserved during six months, and for four months on board, of one of his majesty's ships, were brought on shore: one of them was opened, and every thing found as fresh as if packed but the day before. The other case is reserved to be opened some months hence.

In fine, all the experiments are so decisive, that I presume that no one who goes to sea, whether in the navy or merchant service, will hesitate to adopt the process, which will contribute to their health, and procure them in long voyages every kind of provision as fresh as on shore, and with a trifling expesne.

*Composition for preserving weather-boarding, and all other work, liable to be injured by the weather.*

Lime it is well known, however well burnt, will soon become slacked by exposure in open air, or even if confined in a situation not remarkably dry, so as to crumble of itself into powder. This is called air slackened lime in contradistinction to that which is slackened in the usual way, by being mixed with water. For the purpose of making the present useful composition to preserve all sorts of wood works exposed to the vicissitudes of the weather, take three parts of this air slackened lime, two of wood ashes, and one of fine sand, pass them through a fine sieve, and add as much linseed oil to the composition as will bring it to a proper consistence for working with a painter's brush. As particular